

**Abstract**

A method and system for maximizing satellite coverage at predetermined local times for a set of predetermined geographic location includes a processor operative to determine a period of rotation for each of the desired satellites in the satellite constellation. The processor also determines a time dependent coverage of the satellite constellation based on the period of rotation and the trajectory of each of the desired satellites. The trajectories of the desired satellites are tilted until the satellite constellation provides maximum coverage at the predetermined local times for the set of predetermined geographic locations. If a new satellite constellation is being designed, command signals are programmed into a computer of a launch vehicle containing the modified trajectory. If an existing satellite constellation is being modified, the ground station transmits command signals to the satellites for modifying the trajectory of the satellites in accordance with the tilted trajectory.

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